**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 28- 32: **Transmission media**

**Networks are classified according to below and we will study the following:**

1. Network Categories: LAN, WAN
2. Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet
3. Network communication standards
4. Network hardware and software
5. **Transmission media**
6. Network security

**Transmission media**

**Physical Transmission**

**Twisted – pair cable**

1. What is twisted pair cable?

It is physical transmission media, made up of 2 wires that are not covered.

1. Why do new networks use CAT 5E or CAT 6 rather than CAT 3?

It is faster allowing more data to travel through at one time

1. What are some disadvantages of CAT 5E and why is it used in so many installations?

It is poorly shielded from electromagnetic interference, it can only run for 100m

1. What type of networks is this cable largely used in?

star

**Coaxial Cable**

1. Describe the characteristics of this cable.

Contains two wires that carry data 185m at 10mpbs and is capable of sending in both directions

1. What network is it used in?

Bus network

**Fibre-optic cable**

1. Describe the characteristics of this cable.

Glass or plastic core that carry’s light signals

1. Why is fibre-optic cable often used to connect major switches inside buildings as well as between buildings.

It is very fast and it can run for kilometres with little signal fade

1. What are the disadvantages of this cable?

It is expensive for the cable itself and also the connections needed at each end turning the optical signal into electrical.

**Wireless Transmission,** p 30

**Radio Waves**

1. What is required for radio transmissions to occur?

A transmitter and a receiver

1. Wi-Fi networks use radio waves. What are its advantages over a cable network and what are its disadvantages?

There is less cost and more connections can be made, it is slower and the transmitters still need to be cabled and within range of the server.

1. Describe the characteristics of Bluetooth.

Uses short range radio wave lengths to transmit data up to 10m at 2mpbs.

**Microwaves**

1. Describe the characteristics of microwave transmission.

Wireless transmission media requiring line of sight of the receiver at 4mbps over 5km

1. What are the limitations of microwave transmission?

It is slow and it requires line of sight to the receiver from the transmitter

**Satellite**

1. Satellite transmission can be in what forms?

In radio waves or microwaves.

1. What are the limitations of this form of transmission?

Slow, distance the waves have to travel, and is one of the most expensive.

1. Who might use this form of transmission?

People in remote areas with no other form of connection.

**Infra-red**

1. Describe the characteristics of infra-red transmission.

Uses light waves and requires line of sight .

1. Why is radio wireless networking preferable to infra-red wireless networking?

It is effective up to 5m at very slow data transfer rates and is inferior.